NORTHERN SOUTHEAST HERRING SPAWN-ON-KELP POUND FISHERY

2004 MANAGEMENT PLAN

by

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and

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REGIONAL INFORMATION REPORT[1] NO. 1J04-04

Alaska Department of Fish and Game
Division of Commercial Fisheries
Juneau, Alaska

January 2004

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INTRODUCTION

This plan provides an overview of the 2004 management approach, permit requirements, and regulations for the Northern Southeast Alaska Hoonah Sound and Tenakee Inlet spawn-on-kelp fisheries. 5 AAC 27.185 MANAGEMENT PLAN FOR HERRING SPAWN ON KELP IN SOUTHEASTERN ALASKA establishes the regulatory framework for the Northern Southeast Alaska spawn-on-kelp fisheries.

A closed pound fishery involves releasing sexually mature herring into a net impoundment in which kelp is suspended. The herring are released from the pound after they spawn on the kelp, and the kelp with eggs is then sold. **An open-pound fishery** involves suspending kelp from a floating frame structure in an area where herring are spawning. The herring are not impounded by a net but instead are allowed to naturally spawn on the suspended kelp. The kelp with eggs are removed from the water then sold. Both types of fisheries have the type of product produced in common, which is spawn on kelp.

In both of the northern Southeast Alaska herring spawn-on-kelp fisheries, a closed or an open pound may be operated by a single Commercial Fisheries Entry Commission (CFEC) permit holder, or a pound may be operated by two or more CFEC permit holders. To reduce the amount of gear on the fishing grounds and handling of herring the department has provided an incentive to multiple permit pound operators by giving them a larger allocation of *Macrocystis* blades or fronds.

The Alaska Board of Fisheries met in Sitka in January 2003 and modified the existing regulations for the herring spawn-on-kelp fishery in Section 13-C (Hoonah Sound) and created a new herring spawn-on-kelp fishery in District 12 (Tenakee Inlet). The District 12 fishery will be considered as part of the Northern Southeast spawn-on-kelp limited entry fishery.

The Board of Fisheries recognized that managing new fisheries placed new responsibilities on the Department of Fish and Game that requires additional funding and staff effort. The Department advised stakeholders and the Board that with no new funding the likelihood of implementing new fisheries was problematic. As of this writing the Department is seeking bids from fishermen to conduct a spawn-on-kelp test fisheries in Hoonah Sound and Tenakee Inlet to generate revenue to fund management related activities associated with these fisheries. Details of the fisheries were outlined in news release dated January 21, 2004 and the deadline for bids is February 3, 2004 by 12:00 noon. There were no bids received before the end of the first solicitation period on January 15, 2004.

Department biologists listed at the end of this document are available to answer questions concerning this management plan. Pound fishery participants are also encouraged to carefully review the section of this plan containing requirements of other agencies.

HERRING STOCK STATUS AND GUIDELINE HARVEST LEVEL

Methods of Forecasting Herring Biomass

The Biomass Accounting (BA) method of forecasting has been used to determine the 2004 season's guideline harvest level (GHL) in Hoonah Sound. The BA method uses the most recent year's spawn deposition estimate of eggs, the age composition of the spawning biomass, and weights-at-age to project the following year's return of mature herring. The Hoonah Sound projection also uses the average survival estimate from the age-structured analyses (ASA) from four other areas in Southeast Alaska, and maturation rates estimated by ASA for the nearby Sitka Sound herring stock. A median level of recruitment of age-3 herring specific to Hoonah Sound is also applied to forecast biomass.

This BA method is unlike the ASA method used for forecasting herring biomass for several of the larger stocks in Southeast Alaska, including Tenakee Inlet. The ASA method also uses the spawn deposition estimate of the eggs and the age composition to project the following year's return of mature herring. However, the ASA model calculates survival and maturation rates specific to the spawning stock. The ASA model utilizes a long time series of spawn deposition and age composition information to provide an estimate of the most recent biomass, from which the forecast biomass for the next year is determined. The department will continue to consider converting to use of the preferred ASA method for forecasting for the Hoonah Sound stock beginning as early as 2005.

Once a forecast of the season's biomass is calculated, a standard sliding harvest rate formula allows for a harvest rate of between 10 and 20% depending upon the size of the stock. When the spawning biomass forecast for an area equals the threshold, the exploitation rate is 10% of the estimated spawning biomass. For each incremental increase in the spawning biomass equal to the threshold, the exploitation rate increases by 2%.

Hoonah Sound (Section 13-C)

A summary showing spawning dates, mileage of spawn, and spawning stock size is presented in Table 1. Since the department first monitored the population in 1971, the Hoonah Sound herring spawning stock has averaged 7.0 nautical miles of spawn and 2,356 tons of spawning biomass. Since 1990, the year the spawn-on-kelp fishery started, the stock has maintained an average of 11.2 nautical miles of spawn and 4,386 tons of spawning biomass. The highest ever-recorded spawning biomass occurred in 2003 when 9,423 tons was observed.

In 2003, approximately 16.7 nautical miles of spawn were observed from April 23 through April 26. The spawning biomass estimate derived from dive surveys was 9,423 tons of herring. Age composition of the 2003 spawning herring was 5% age-3, 12% age-4, 30% age-5, 25% age-6, 7% age-7, and 21% age-8+ (Table 2).

Based on spawning age structure and biomass in 2003, the BA method forecast return for Hoonah Sound in 2004 is **6,037 tons.** This forecast is well above the threshold or minimum amount of herring spawning biomass of 1,000 tons. The GHL for 2004 is **1,207 tons** based on a 20% harvest

rate. The expected age structure for 2004 is 3% age-3, 12% age-4, 14% age-5, 26% age-6, 21% age-7, and 24% ages-8+. The kelp blade allocation at the 2004 GHL is 1,000 blades for single operator herring pounds.

Herring spawning normally occurs in Hoonah Sound during the last two weeks of April. The earliest recorded spawning occurred on April 13, 1990, and the latest recorded spawning was on May 17, 1971. During the 2003 season, spawning occurred from April 23 through April 26. Traditionally, spawning occurs in Hoonah Sound around Vixen and Emmons Islands and the shoreline from Fick Cove to Ushk Point. Spawning has also been observed in Peril Strait along the Chichagof Island shoreline from Finger River to Broad Island, at False Island, and along the Baranof Island shoreline from Nismeni Point to Point Benham.

In Hoonah Sound during the 2003 season, a total of 108 permit holders made landings totaling 283,071 pounds (141.6 tons) of spawn on kelp (Table 3). The 2003 season fishery ex-vessel value of $1.92 million nearly equaled the 2002 season, record-value of $1.97 million. Spawn on kelp production of 141.6 tons increased by about 5 tons from 2002. In 2002 high production for the fishery was the result of a high guideline harvest level (GHL) for this stock of 1,264 tons. This allowed single-permit closed pound operators to use 1,000 *Macrocystis* kelp blades under new kelp allocation guidelines in regulation. The highest number of kelp blades a permit holder was allowed in a closed pound previous to the 2002 season was 430 kelp blades. The record-level production of spawn on kelp product in 2003 was un-expected since most participants operated shared impoundment nets, and the overall closed pound Macrocystis kelp blade allocation for the fishery declined to 53% of 2002 levels from 106,000 blades to 56,050 blades. The majority of pounds used 1,000 blades of kelp in 2003, however the allocation to each individual permit holder was 500 blades. Exceptional production during the 2003 season is attributed to a combination of high kelp utilization in pounds, prolonged herring availability for multiple herring introductions into pounds, and continuing innovations of pounding technique by fishermen.

Tenakee Inlet (Section 12-A)

The Tenakee Inlet stock has been utilized for the winter food and bait fishery since the 1978/1979 season. The GHL for the winter food and bait fishery in Tenakee Inlet has ranged from a low of 200 tons in 1978/1979 to a peak GHL of 1,700 tons in 1985/1986 (Table 4).

ADF&G has been conducting aerial surveys in Tenakee Inlet since the early 1970s to define herring spawn deposition areas and to estimate the total miles of spawn to provide an indication of herring stock size or biomass. Aerial surveys were supplemented with hydroacoustical surveys from 1979 through 1986 to provide a more refined estimate for biomass of Tenakee Inlet herring. Starting in the spring of 1987, spawn deposition dive surveys were routinely used, in addition to aerial surveys, as the most reliable and accurate means to assess the spawning biomass.

In the early to mid-1990s, the Tenakee Inlet herring stock was at a depressed level due to a period of low recruitment beginning in 1988. It was not until 1996 that a strong recruitment of three-year-old herring entered into the population boosting the biomass to over 4,500 tons, up from 200 tons the previous year. The biomass peaked in 1999 at 11,000 tons and has since declined back down to around 4,500 tons in 2003.

Dive surveys, conducted in the spring of 2003, estimated the Tenakee Inlet herring spawning biomass at **3,262 tons** of herring. In Tenakee Inlet the threshold biomass needed before a fishery can occur is 3,000 tons. The dive survey biomass estimate and threshold biomass levels were used in conjunction with the ASA model to provide a return forecast for the 2003/2004 season of 3,794 tons of herring allowing for a **quota of 399 tons** based on a harvest rate of 10.5%. The age composition of the 2003 spawning population was 13% age-3, 10% age-4, 24% age-5, 18% age-6, 5% age-7, and 31% age-8+. The expected age structure for 2004 is 14% age-3, 18% age-4, 20% age-5, 27% age-6, 15% age-7, and 6% ages-8+ (Table 5). The minimum allowable GHL for an open pound fishery is 50 tons and the minimum GHL for a closed pound fishery is 100 tons. The GHL for the Tenakee Inlet herring spawn-on-kelp pound fishery will be announced on March 16, 2004.

Spawning in Tenakee Inlet has generally occurred between the last week in April and the first week of May (Table 4). During the 1970s through the late 1980s, herring primarily spawned along the south shoreline of Tenakee Inlet between Saltery Bay and Trap Bay. The most frequented spawning grounds were along the east and west shoreline of Kadashan Bay. During the spring of 1989, aerial surveys revealed that herring had spawned in the East Point and Wachusetts Cove areas on the Chatham Strait shoreline north of Tenakee Inlet. Additional herring spawn was observed south of Tenakee Inlet between South Passage Point and Basket Bay in Chatham Strait. This was the first time herring had been recorded spawning in areas other than their more traditional spawning grounds inside Tenakee Inlet. The spring of 1996 was the only season that significant spawning was recorded on the north shore of Tenakee Inlet. This spawn occurred on the shoreline from Tenakee Springs to Cannery Point. A total of 18.1 nautical miles of spawn occurred during the spring of 1996.

From 1998 through 2003, spawning has occurred inside Tenakee Inlet along its southern shoreline from Saltery Bay to South Passage Point and on the Chatham Strait shoreline south of South Passage Point (Figure 1). Significant spawning has occurred between South Passage Point and Basket Bay four of the past six seasons (1998–2003). In 2000 all of the spawn occurred in Chatham Strait between South Passage Point and Peninsular Point. A total of 12.2 nautical miles of shoreline was mapped as receiving herring spawn in spring 2003. Spawning inside Tenakee Inlet primarily occurred from Corner Bay to Saltery Bay. Some light spawn occurred in Chatham Strait from South Passage Point to the northern entrance of Basket Bay.

Regulations adopted by the Alaska Board of Fisheries (BOF) in January 2003 provide for a spawn-on-kelp fishery in Tenakee Inlet that occurred for the first time in April 2003. In 2003 there was less than 300 tons but more than 100 tons (bait harvest confidential) of GHL available to the spawn-on-kelp fishery. This provided a kelp allocation of 200 blades per individual permit. A total of 59 permits harvested 95,000 pounds of product in Tenakee with an exvessel value of approximately $550,000.

CALENDAR OF EVENTS

The following is a calendar of events to be considered by pound operators for the 2004 fishing season.

January 29	-	2004 Management Plans are available at all Southeast Alaska area offices.
January 29		2004 Experimental Gear Permit Applications available
No Specific Deadline/ Recommend March 1	-	U.S. Forest Service special-use permit applications (for use of National Forest land above mean high tide) must be submitted to obtain a special-use permit. Special-use permits are required to camp or store gear on National Forest land in conjunction with this fishery. Please contact the USFS directly for applications at (907) 747-4220.
March 16	-	The department will issue a news release announcing the Tenakee Inlet herring spawn-on-kelp GHL and kelp allocation. The department will also announce the status of test fishery bids at this time.
April 2	-	Kelp permits will be available at department area offices.
April 6	-	The fisheries will open by regulation to the capture of herring to be transferred into pounds.
April 13–May 9	-	Inclusive dates of documented herring spawning in Section 13-C from 1990–2003.
April 21–May 14		Inclusive dates of documented herring spawning in Section 12-A from 1990–2003.
June 7	-	Pounds must be completely removed from the fishing grounds.

REGULATIONS

The Alaska Board of Fisheries met in Sitka in January 2003 and modified the existing regulations for the herring spawn-on-kelp fishery in Section 3-B (Craig/Klawock) and Section 13-C (Hoonah Sound) and created new herring spawn-on-kelp fisheries in District 7 (Ernest sound) and Section 12-A (Tenakee Inlet). The District 7 fishery will be considered part of the Southern Southeast spawn-on-kelp limited entry fishery (L21C) and will be discussed in the Southern Southeast Spawn-on-kelp Management Plan. Section 12-A is considered part of the Northern Southeast spawn-on-kelp limited entry fishery (L21A).

The board modified the kelp allocation tables for the Hoonah Sound (Section 13-C) spawn-on-kelp herring pound fishery and created a kelp allocation table for the Tenakee Inlet (Section 12-A) fishery.

In Section 13-C, the kelp allocation is as follows:

Guideline Harvest Range for Herring (tons)	Single Permit Closed Pounds	Double-Permit Closed Pounds	Triple-Permit Closed Pounds	Single Permit Open Pounds	Multiple Permit Open Pounds
100 – 249	None	none	none	60 fronds or 600 blades	60 fronds or 600 blades
250 –399	200 blades	400 blades	500 blades	110 fronds or 1,100 blades	110 fronds or 1,100 blades
400 – 599	300 blades	500 blades	750 blades	160 fronds or 1,600 blades	160 fronds or 1,600 blades
600 – 799	1,000 blades	1,000 blades	1,500 blades	230 blades or 2,300 fronds	230 blades or 2,300 fronds
800 or more	1,000 blades	1,000 blades	1,500 blades	300 blades or 3,000 fronds	300 blades or 3,000 fronds

In Section 12-A, the kelp allocation is as follows:

Guideline Harvest Range for Herring (tons)	Single Permit Closed Pounds	Double-Permit Closed Pounds	Triple-Permit Closed Pounds	Single Permit Open Pounds	Multiple Permit Open Pounds
50 – 99	None	none	none	100 fronds or 1,000 blades	300 fronds or 3,000 blades
100 – 299	200 blades	400 blades	500 blades	150 fronds or 1,500 blades	450 fronds or 4,500 blades
300 – 499	300 blades	500 blades	500 blades	200 fronds or 2,000 blades	600 fronds or 6,000 blades
500 – 699	400 blades	500 blades	500 blades	250 fronds or 2,500 blades	750 fronds or 7,500 blades
700 +	1,000 blades	1,000 blades	1,000 blades	250 fronds or 2,500 blades	750 fronds or 7,500 blades

Besides modifying the kelp allocation tables the board also adopted proposals that clarified the allocation of herring between the bait fisheries, which include bait pound fisheries in addition to the winter food and bait fishery, and the spawn-on-kelp fisheries.

District 12 (Tenakee) harvest limit for the bait pound fishery will be 10 percent of the guideline harvest level for the Tenakee Inlet stock and the harvest limit for the winter food and bait fishery is 90 percent of that guideline harvest level. The Tenakee spawn-on-kelp pound fishery is allocating any remaining herring quota that is not taken in the winter food and bait fishery. In addition, if there are no active herring bait pound permits on March 15 each year, the remainder of the seasonal GHL will be allocated to the herring spawn-on-kelp fishery. Any remaining GHL after the close of the spawn-on-kelp fishery in District 12 will be available for the bait pound fishery. The department will announce, via a subsequent news release, the herring allocation for the spawn-on-kelp fishery on March 16, 2004.

In addition to modifying the kelp allocation tables and clarifying the herring allocation plans the board also adopted proposals that modified the overall management plan of the herring spawn-on-kelp fisheries. A summary of these actions includes:

1. After the last herring has been placed into the pounds, **two pounds** of two or more CFEC permit holders may drop a wall of their respective pounds to allow herring to swim between two connected pounds. The CFEC permit holders must notify the department representative prior to joining their pounds. Additional herring may not be allowed into the pounds once the two of them are joined.

   This does not change the definition of pounds as found in **5 AAC 27.130. LAWFUL GEAR FOR SOUTHEASTERN ALASKA AREA. (e)(1)** which, in part, states that webbing of a closed pound may not be part of the webbing of another closed pound. Therefore, after fishing operations have ended, two pounds may be joined, but they must remain up to that point a single unit of gear.

   If two pounds are joined the regulation that allows for retention of herring for six days will be enforced on the pound which first had herring placed into the structure. Only two pounds can be joined together.

2. All lines or structures used to suspend kelp must have legible tags above the water surface that states the actual number of blades or fronds on that line or structure along with the permit holder's first and last name. A CFEC permit holder must keep that permit holder's kelp on separate lines or structures.

   The term structure was added to allow for pound operators that suspend their kelp on something besides lines the ability to identify the number of blades or fronds being used.

3. For the purpose of this fishery, a closed pound is considered to be fishing once herring have been introduced into the closed pound structure; a closed pound is considered to have stopped fishing once all of the herring have been released and all of the spawn-on-kelp product has been removed from the closed pound structure.

4. For the purpose of this fishery, an open pound is considered to be fishing once kelp has been attached to the open pound structure; an open pound is considered to have stopped fishing once all of the spawn-on-kelp product has been removed from the open pound structure.

The reason for the latter two changes is to define how a permit holder may participate in both of the Hoonah Sound and Tenakee Inlet fisheries in which they hold a permit. For example for a Northern Southeast spawn-on-kelp CFEC permit holder to operate a closed pound in both Section 13-C and 12-A all the herring must be released and the product harvested from one Section before a pound can be actively fished in another Section.

The department has received inquiries from permit holders wanting to transport pound structures immediately after fishing from one regulatory area to another in order to participate in two

fishery locations without the added expense of a second pound structure. Regulation 5 AAC 27.185 (t), however, requires that "…the person must maintain the pound and webbing in place for at least four weeks. To optimize hatching success the person must position egg-covered webbing in its original configuration with adequate water circulation on all sides." Fishermen are reminded that this regulation remains in effect. After consideration of the regulatory intent "to optimize hatching success" the department and FWP would allow transport of the pound structure to another area provided that the egg-covered webbing: 1) remains anchored in the original area, 2) is supported in its original configuration, and 3) is marked according to 5 AAC 27.185 (k) with the first and last name and the five-digit CFEC number of the permit holder clearly marked. To be considered as "supported in its original configuration" and in compliance with this regulation, the permit holder must both support the net at the surface with adequate floatation and separate the sidewalls of the net so there is "adequate water circulation on all sides." Since these requirements could be met with buoy bags or other material for floatation, and pipe or other rigid material to separate the sidewalls, the department will provide for a fishery-wide experimental gear permit (under the authority of AS 16.05.050(10)) for the 2004 season exempting permit holders in the Northern Southeast Alaska herring spawn-on-kelp fisheries from the requirement that the pound structure will be left in place provided that all other provisions of 5 AAC 27.185 (t) and (k) still remain in effect. Since the department will maintain a copy of this permit on file for all permit holders, individual permit holders do not need to apply or have such permits on their possession.

The waters open for the northern spawn-on-kelp fisheries are defined in regulation. The open waters for Section 12-A include: the waters of Chatham Strait and Tenakee Inlet south of the latitude of **57°46.00'** N. latitude and north of the latitude of Peninsular Point at **57°30.30'** N. latitude and west of the longitude of **134°50.00'** W. longitude. The waters open for the Hoonah Sound fishery include: the waters of Hoonah Sound north and west of a line from Point Marie to a point on the northern shore of Hoonah Sound at 57° 37.38' N. latitude, 135° 27' W. longitude (Figure 2).

Additional regulations pertaining to the Hoonah Sound and Tenakee Inlet pound fisheries can be found in the 2003–2004 Commercial Herring Fishing Regulations booklet under CHAPTER 27, ARTICLE 4, SOUTHEAST ALASKA AREA under the following sections: 5 AAC 27.110 FISHING SEASONS FOR SOUTHEASTERN ALASKA AREA(f), 5 AAC 27.130 LAWFUL GEAR FOR SOUTHEASTERN ALASKA AREA(d), and (e), and 5 AAC 27.185 MANAGEMENT PLAN FOR HERRING SPAWN-ON-KELP IN POUNDS(a) through (x), and 5 AAC 27.187 BUYER AND PROCESSORS REPORTING REQUIREMENTS FOR SPAWN ON KELP IN POUNDS FOR THE SOUTHEASTERN ALASKA AREA. Harvesting requirements for *Macrocystis* kelp are found in 5 AAC 37.100 PERMITS. AND 5 AAC 37.300 HARVESTING REQUIREMENTS FOR MACROCYSTIS.

It is the responsibility of fishers to carefully review and follow these regulations.

EXPERIMENTAL GEAR PERMITS

A proposal was presented to the Alaska Board of Fisheries in 2003 to modify closed pound gear from the present requirement of 400 square feet at the surface and a maximum depth of 30 feet. The proposal had requested maintaining the same 12,000 cubic foot net volume, but by using a shallower net with a greater surface area. This proposal was not adopted due to insufficient supporting information, the general need to have standardized gear for an orderly fishery, and the need to limit the harvest of herring. The department indicated to the Board that it would continue to work on development of gear through the experimental gear permit option as authorized under AS 16.05.050(10). As a follow-up, two non-standard pound net configurations were authorized on an experimental basis in 2003. One net was 20x30x20-foot deep, one was 20x40x15-foot deep, and both were 12,000 cubic foot in volume. Results from the 2003 study indicated that the experimental pounds were associated with greater total poundage and greater proportion of product graded as Jumbo. Results from the 2003 study are as follows:

Production from 500 Blades in Double Closed Pounds			
Pound Type	20x40x15	20x30x20	20x20x30
Number Fishing	2	2	92
Avg Lbs SOK/fisher	3,997	4,545	2,556
Jumbo %	69	64	29
#1 Grade %	17	8	36
#2 Grade %	2	1	18

Although these results are encouraging, greater product quality and quantity during the experimental fishery cannot entirely be attributed to the different gear configuration. The operators of experimental pounds in 2003 have pointed out that several measures were taken to increase production and quality. Some of these measures may already be in general use during the fishery, but some do represent new innovations which are worth considering: 1) pound nets were shaped with internal frames to provide the full net volume, 2) kelp height in the pound was adjusted to the depth of active spawning by testing with a weighted string, 3) fishing was conducted when herring were fully mature, 4) small top-off sets were added over a 2-3 day period, then, after fishing, spawned-out herring nearer the surface were periodically released over several days, 5) herring density in the net was limited to a conservative amount since spawning is retarded by excessive crowding, 6) web depth adjustments were made to provide good water exchange, and 7) working in a smaller group provided adequate time for tending the pound.

The department has received numerous requests for experimental gear permits to fish alternate pound net configurations in 2004. The department is committed to working with the industry to evaluate the option of changing the gear allowed by regulation through the Board of Fisheries process. To provide for this option, the department is requesting that pound fishermen contact the Sitka Fish and Game office at (907) 747-6688 with the name, phone number and mailing addresses of permit holders in their group who would operate experimental gear, and the length,

width, depth and volume of the net. Requests will only be considered until March 1, 2003. Experimental Permits will be mailed out to applicants on a weekly basis as they are received. Permits must be signed by each permit holder and the commissioner's designee and must be carried by the permit holder while fishing to be valid. No permits will be issued for net volumes greater than 12,000 cubic feet. The department recommends a significant portion of each larger group, and of the overall fishery, should continue to operate standard 20x20x30 foot-deep nets to provide for a good comparison between gear types following the 2004 season. The department plans to check the depth of nets holding herring by using a weight and string to ensure compliance with net volume limits. Information concerning violations will be provided to the Bureau of Fish and Wildlife Protection for citation. In the event the violation of net depths is not enforceable then the department would not recommend a change from current regulations, and is not obligated to continue issuing experimental gear permits beyond the current season. The department will not request post-season reports on the permit since this study can be completed by the evaluation of fish ticket information.

LIMITED ENTRY

On January 1, 1995, the Commercial Fisheries Entry Commission adopted a regulation placing the Southeastern Alaska herring spawn-on-kelp pound fisheries in the Hoonah Sound and Craig/Klawock areas under limited entry. By regulation, the maximum number of limited entry cards for the Northern Southeast area spawn-on-kelp fishery (L21A) is 109. Based on administration of the point system adopted in February of 1995 CFEC has now issued 102 limited entry permit cards for this fishery. Up to 13 interim-use permit cards may be issued during the 2004 season pending the outcome of hearings and administrative reviews now in progress. At most, 115 fishers will be eligible to participate in the Hoonah Sound and/or Tenakee Inlet fisheries during the 2004 season.

HARVEST AND ALLOCATION OF KELP

A permit is required to harvest kelp for use in pounds (5 AAC 37.900). Kelp harvest permits may be obtained from local department offices. Kelp blades will be allocated equally among permit holders fishing the same type of gear. The amount of kelp allowed to be harvested for each permit holder is based on the kelp allocation table as indicated under REGULATION 5 AAC 27.185 (d) plus an allowance for breakage and loss during transport. Specific allocation limits are for individual permit holders and are dependent upon the herring GHL and the type of gear to be used. The allocations for the 2004 season are as follows:

Section 13-C (Hoonah Sound):

- Single permit closed pounds — 1,000 blades of *Macrocystis* kelp;

- Double permit closed pounds — 1,000 blades of *Macrocystis* kelp (per permit holder);
- Triple permit closed pounds — 1,500 blades of *Macrocystis* kelp (per permit holder);
- Single permit open pounds — 3,000 blades or 300 fronds of *Macrocystis* kelp;
- Multiple permit open pounds — 3,000 blades or 300 fronds of *Macrocystis* kelp.

Section 12-A (Tenakee Inlet): To be determined on March 16.

Total harvest limits are set on the kelp permit, and generally include a 10% breakage allowance. Kelp permits may be issued to individuals holding CFEC permit cards for the Hoonah Sound and/or Tenakee Inlet fisheries who are harvesting for a group of CFEC permit holders, provided that the name and amount harvested for each permit holder is listed on the permit. Kelp permits may be obtained from local Fish and Game offices beginning April 2 and must be completed and returned to the department within 30 days after harvesting of kelp. A separate permit is required for each separate fishery for which kelp is harvested.

The kelp allocation incentive table is intended to encourage fishers to share closed herring pounds during times when forecast herring stock abundance and the associated herring GHL is above threshold but relatively low, and to allow fishers to fish more single closed pounds when forecast herring abundance is relatively high. As the herring forecast and GHL increases, the kelp allocation becomes increasingly more liberal. The kelp allocations as set forth in the allocation table are upper limits, not required amounts, and fishers may decide within that limit how much kelp they will actually suspend from their pounds. Use of open pounds is also encouraged through kelp allocations as an option to help minimize herring handling and impoundment. Fishers choosing to fish open pounds are allowed to fish with larger amounts of kelp blades or with kelp fronds with the blades naturally attached to the kelp stalk. When harvesting fronds of kelp for use in open pounds, fishers are reminded that provisions of 5 AAC 37.300 HARVESTING REQUIREMENTS FOR MACROCYSTIS KELP (a)–(d) prevent harvest using diving gear, dislodging plants from the bottom, or cutting of kelp stalks at depths greater than one foot below the water surface.

FISHERY CONDUCT AND MANAGEMENT

Suitable sites for pounds in Hoonah Sound and Tenakee Inlet are limited. To avoid herring mortality and damage to the pounds, operators should locate their pounds in an area with minimal exposure to wind and wave action, and with a relatively deep bottom. The distance between the location where herring are captured and the pound will be anchored should be minimized since long towing distances can cause stress induced spawning, egg loss, de-scaling of herring, and mortality of herring. The area between Emmons Island and Vixen Island has been the main focus for anchoring pounds since herring normally spawn near this area.

The department will be closely monitoring herring activity in Hoonah Sound and Tenakee Inlet by vessel and aerial surveys. Results of aerial surveys will be announced by recorded message at 907-

747-5022 (Sitka office) or 907-465-88905 (Douglass office) or by department news release if findings have a significant bearing on when fishing activity should begin. Permit holders may begin catching and transferring herring at any time after 12:01 a.m., April 6, 2003, until closed by emergency order. If it appears spawning will occur earlier than this date, the fishery may be opened earlier to avoid loss of the fishery.

In Hoonah Sound, the department will station a state vessel and personnel on the grounds when herring are available for capture. In Tenakee Inlet, department personnel will be stationed in Tenakee Springs and will use a skiff to monitor fishing activity. Department personnel will closely monitor all phases of the fishery to assure compliance with regulations. All fishery announcements, including updates of herring activities and fishery openings/closures, will be broadcast by VHF radio, channel 10. Fishers are expected to have a VHF radio.

The capture and transfer of herring into pounds will be monitored to document any mortality or rough handling of herring. To avoid mortality, the transport of herring to the pound site should be done with the pound itself or a pushable/towable net pen. Transporting with a purse seine is discouraged except for very short distances. Pound operators should **slowly push pounds or tow alongside** of the transfer pound to avoid prop wash and crushing herring against the net. Pound operators are also advised to minimize the distance of towing of herring to avoid stressing the herring and egg loss which can result in poorer quality product. Fishers are asked to avoid making and holding large sets intended to fill multiple pounds in order to avoid mortality and stress of herring. The department may close the fishery or limit fishing to daylight hours only in order to minimize stress and mortality, to reduce potential set size, and to better monitor the fishery.

In 2004, the department will more closely monitor the practice of **"top off fishing."** This practice has been successfully used to stimulate new spawning in pounds and therefore to produce better spawn on kelp quality and quantity. The department has a concern, based on observations during the 2003 season, that the practice of "top off fishing" is being abused by some fishermen. Regulations allow herring additions through the fourth day from when herring are first added to a pound, but neither kelp nor herring may be added to a pound after herring has been released or product has been harvested (5 AAC 27.185(q)). Herring may be retained in a pound for a maximum of six days from the day first placed into a pound and then must be released (5 AAC 27.185(s)). These two regulations are fundamental to the health of the herring spawning stocks and, along with gear size and kelp allocation limits, provide for sustainable use by limiting the harvest of herring by the fishery. **Fishermen must take responsibility to ensure that when adding herring to a pound that herring are not at the same time swimming out of the pound thereby exchanging spawned-out herring with fresh herring and harvesting more than one pound net full of herring during a season.** If any such cases are observed or reported in 2004, then the department will turn such cases over to the Bureau of Fish and Wildlife Protection for citation. Additionally, the department will consider closure of the fishery to all further fishing by emergency order or limiting fishing to specific daylight hours only. Should the latter two measures become necessary, then such measures may have the unwanted consequence of preventing some permit holders from the capture of herring that season. The department is requesting the assistance of permit holders to ensure that additions of "top off fishing" are only conducted in compliance with regulations and that violations are reported.

Although the department has determined a limitation on the number of kelp blades that can be harvested and placed in each permit holder's pound, fishers are encouraged to fish the number of blades which will maximize the overall quality and value of their product rather than simply to fish the total amount allowed by the department.

The department received numerous inquiries from fishers in 2003 wanting to participate in both the Hoonah Sound fishery and the newly established Tenakee Inlet fishery. In 2003, thirty-two Northern Southeast Alaska SOK permit holders were successful in making landings in both fishing areas. The herring spawning dates in Hoonah Sound and in Tenakee Inlet have been very similar, especially in recent years (Figure 3). This will create challenges for those permit holders wanting to fish in both areas in any one year. Fishers are warned that only one unit of gear or one pound may be fished by a permit holder at any given time. The Board of Fisheries provided regulatory language defining when a pound is fishing and when it is not (see "REGULATIONS" section of this document). Fishers are also reminded that the permit holder must be physically present at the pound site at all times during operation of the pound as defined in Section (l) of 5 AAC 27.185 MANAGEMENT PLAN FOR HERRING SPAWN ON KELP POUNDS IN SOUTHEASTERN ALASKA AREA. The historic spawn-timing graph presented in Figure 3 is provided for general reference.

The Hoonah Sound area is a high-use recreational area that is valued for its fish and wildlife resources as well as its wilderness character. The department has received a number of public complaints regarding pound structures and other material that were either abandoned in the water or on the upland areas. All materials that are used in the fishery should either be removed from the area or stored in the upland areas under the terms of a required United States Forest Service conditional use permit (see page 13).

HARVEST AND PRODUCTION

Each permit holder's spawn-on-kelp blades must remain separate from other permit holder's spawn-on-kelp blades until after processing and grading is completed. Permit holders will be allowed to harvest all spawn-on-kelp product produced in their pounds. A permit holder's fish ticket must report only the spawn-on-kelp harvested from his/her own pound. Each permit holder fishing a jointly operated pound shall be issued a fish ticket and the **sum** of the weights of those tickets shall equal the total weight of product produced in the jointly operated pound. All fishers and any vessel carrying unlanded and unprocessed spawn-on-kelp product from the fishing grounds must first contact the department and hail the estimated amount of spawn-on-kelp product harvested and indicate the intended time and location where a landing will occur. For any product that has been landed on the grounds to a licensed processor, the processor (not the fishers) will be required to hail the department with delivery weight for each landing on board.

REQUIREMENTS FOR BUYERS

Reporting requirements for buyers and processors of spawn-on-kelp product from the Hoonah Sound and Craig-Klawock fisheries can be found in **5 AAC 27.187 BUYER AND PROCESSORS REPORTING REQUIREMENTS FOR SPAWN ON KELP IN POUNDS FOR THE SOUTHEASTERN ALASKA AREA.**

Buyers, processors, and permit holders should read and become familiar with these reporting requirements.

Operators of floating processing vessels, tender vessels, and catcher-processors will be required to report in person, by VHF radio, or by telephone, to the Department of Fish and Game office in Sitka or directly to department area management biologists on the grounds before the start of processing operations in Hoonah Sound. These reporting requirements are specified by regulation **5 AAC 39.130 (g).**

LICENSE REQUIREMENTS

Operators must obtain a 2004 entry permit (L21A) from the CFEC. Individuals who do not have a CFEC permit but are assisting in the operation of the fishery in any manner, must have a 2004 crewmember license. All commercial vessels used in the fishery (including skiffs) are required to have a 2004 vessel license with the CFEC. Fishers are required to display the permanent vessel license plate (ADF&G number) on both sides of the hull, cabin, or mast in permanent symbols at least 12-inches high and with lines at least one-inch wide that contrast with the background.

Applications for vessel and CFEC permits are available from all offices of the Alaska Department of Fish and Game or they can be obtained by writing the Commercial Fisheries Entry Commission, 8800-109 Glacier Highway, Juneau, Alaska 99801-8079. Fishers are reminded to apply for all licenses well in advance of the fishery. Crewmember licenses may be obtained from local vendors in most communities.

OTHER AGENCY REQUIREMENTS

Prospective pound operators are advised to consider other agency requirements for constructing and operating pounds in Hoonah Sound and/or Tenakee Inlet. Pound operators are urged to contact the Alaska Department of Natural Resources, U.S. Forest Service, the National Marine Fisheries Service, and the United States Coast Guard to determine other regulations and requirements. For your convenience phone numbers for those agencies are listed below.

Department of Natural Resources

The Alaska Department of Natural Resources (907-465-3400) manages the use of tide and submerged lands seaward of mean high water (9.1 ft.).

U.S. Forest Service

In the Hoonah Sound and Tenakee Inlet areas, the U.S. Forest Service has jurisdiction over and manages most of the lands above mean high tide. People who plan to use National Forest land in connection with the fishery must apply for a special use permit from the Forest Service prior to any occupancy. Special use permit applications are available at the Sitka Ranger District Office, 204 Siginaka Way, Sitka, Alaska 99835, (907-747-6671). Completed applications should be submitted to the Sitka Ranger District well in advance of operations to ensure that a permit is received in time for the fishery. Examples of use needing a permit include (but not limited to): camping on National Forest land in conjunction with the commercial fishery, and storage of gear on the National Forest.

National Marine Fisheries Service

The National Marine Fisheries Service (907-747-6940) regulates activities that might harm marine mammals.

United States Coast Guard

Structures such as floating fish pens are subject to the requirements of the Code of Federal Regulations, Title 33, Part 64. This regulation requires an owner to apply for a Coast Guard permit and to install and maintain a light or other private aid to navigation if the Coast Guard determines it to be necessary to protect maritime navigation.

Herring pounds used in the spawn-on-kelp pound fishery do not require permits for private aids to navigation at this time, provided the owners:

1. Place two signs on opposite corners of the structure. These signs will be worded “Danger, Fish Pens” (Figure 4).
2. Place a single, all-points white light on one corner of structures less than 400 square feet in size.
3. Place a single, all-points white light on every corner of structures larger than 400 square feet in size.
4. Anchor fish pens within the boundary area specified in ADF&G regulation 5 AAC 27.185 (f)(3) or (4) (Figure 2).

If all these conditions are not met, the permit holder must apply to the Coast Guard for an individual “Private Aids to Navigation Permit.” If you have questions, call the Coast Guard Aids to Navigation office, at (907) 463-2254.

Table 1. Hoonah Sound herring spawning stock and fishery performance, 1971–2003.

Year	Spawn Dates	Nautical Miles Spawn	Estimated Escapement (tons)	SOK Harvested (tons)
1971	5/10-5/17	2.5	833	
1972	5/11-5/12	1.5	666	
1973	N/A	1	333	
1974	14-May	3	999	
1975	N/A	N/A		
1976	5-May	1	333	
1977	N/A	3.5	1,166	
1978	N/A	5.3	1,765	
1979	N/A	0.5	167	
1980	N/A	N/A		
1981	4/30-5/01	2.3	750	
1982	4/29-5/01	1.5	500	
1983	1-May	1	333	
1984	4/26-5/01	3	540	
1985	5/01-5/03	3.5	1,166	
1986	4/28-5/01	3.8	1,249	
1987	4/28-5/02	3.8	740	
1988	4/30-5/01	5	1,665	
1989	4/16-4/20	17	4,000	
1990	4/13-4/28	10	2,350	11.9
1991	4/19-4/24	8.7	2,175	13.3
1992	4/22-4/24	10.8	5,714	23.1
1993	4/27-4/29	5.7	1,099	14.0
1994	4/21-4/23	9	2,450	32.7
1995	4/20-4/21	4.5	274	27.4
1996	5/02-5/9	10.1	4,023	closed
1997	4/25-4/28	14.5	5,884	65.2
1998	4/23-4/27	14.5	6,472	85.6
1999	4/27-5/1	13.8	4,426	71.6
2000	4/27-4/30	13.0	3,635	35.7
2001	4/27-5/1	13.7	8,538	66.2
2002	4/25-4/27	11.9	4,936	136.6
2003	4/23-4/26	16.7	9,423	141.6
Average	1971-2003	7.0	2,356	NA
Average	1990-2003	11.2	4,386	55.8

Shaded estimated escapements are based on average spawn density of years 1989–2002.

Table 2. Percent-at-age composition of spawning Hoonah Sound herring, 1991–2003 and forecast age structure for 2004.

	Age Class					
Year	**3**	**4**	**5**	**6**	**7**	**8+**
1991	44	8	4	15	22	5
1992	7	55	6	4	14	11
1993	7	17	56	8	1	10
1994	3	10	35	42	5	6
1995	25	6	16	30	19	4
1996	83	13	1	1	2	1
1997	8	80	7	2	2	1
1998	2	13	77	7	1	1
1999	3	5	13	72	6	1
2000	23	10	10	24	31	2
2001	17	31	5	6	14	27
2002	4	27	24	6	7	31
2003	5	12	30	25	7	21
2004 Forecast	3	12	14	26	21	24

Table 3. Hoonah Sound herring spawn-on-kelp fishery summary, 1990–2003.

	1990	1991	1992	1993	1994	1995
Herring Quota (tons)	150	150	150	150	150	150
Harvest Quota (tons)	11	12	12	12	12	12
Harvest (tons)	11.9	13.25	23.12	14.0	32.7	27.4
Exvessel Value	$201,348	$193,715	$453,152	$542,080	$1,683,396	$1,175,460
Average Price/lb	$8.46	$7.31	$9.80	$19.36	$25.74	$21.45
Average Income	$2,034	$2,334	$4,196	$8,470	$15,444	$9,715
Number of Applicants	400	185	199	230	195	153
Number of Pounds	128	104	120	115	123	132
Number Selling Product	99	83	108	64	109	121
Kelp Allocation (blades)	240	280	240	160	140	100
Kelp Blade Harvest	31,260	28,355	27,255	16,260	18,340	15,195
Fishery Open - Closed	4/13-4/22	4/6-4/25	4/6-4/26	4/6-5/3	4/6-4/25	4/6-4/22
Fishing Occurred	4/13-4/22	4/15-4/25	4/17-4/26	4/26-5/2	4/21-4/24	4/17-4/22
Harvest Occurred	4/18-4/27	4/22-4/29	4/22-4/30	4/25-5/2	4/25-4/27	4/22-4/26
	1997	**1998**	**1999**	**2000**	**2001**	**2002**
Herring Quota (tons)	1421	700	778	359	366	1,264
Harvest Quota (tons)	114	56	62	29	NA	NA
Harvest (tons)	65.2	85.9	71.6	35.7	66.2	136.6
Exvessel Value	$920,000	$1,160,523	$1,005,529	$587,568	$1,006,000	$1,970,000
Average Price/lb	$7.05	$6.75	$7.02	$8.23	$7.60	$7.32
Average Income/Landing	$6,694	$10,092	$11,692	$6,251	$11,559	$20,408
Number of Applicants	139	133	106	106	NA	NA
Number of Pounds	0/113/18[b]	115	96	46/2/0[b]	42/3/1[b]	106/0/2[b]
Number Selling Product	112/12[a]	115	86	84	87	98
Kelp Allocation (blades)	430/860[a]	400/800[a]	400/800[a]	110/300[c]	120/300[c]	1,000/3,600[a]
Kelp Blade Harvest	68,755	54,275	42,025	29,820	29,966	113,713
Fishery Open - Closed	4/6-4/29	4/6-4/27	4/6-5/3	4/6-5/3	4/6-5/3	4/6-5/1
Fishing Occurred	4/22-4/29	4/18-4/26	4/29-5/2	4/27-4/29	4/25-4/28	4/24-4/27
Harvest Occurred	4/27-5/3	4/25-4/27	5/3-5/5	5/2-5/4	4/30-5/2	4/28-5/1
	2003					
Herring Quota (tons)	427					
Harvest Quota (tons)	NA					
Harvest (tons)	141.6					
Exvessel Value	$1,922,500					
Average Price/lb	$6.79					
Average Income/Landing	$17,800					
Number of Applicants	NA					
Number of Pounds	49/1/3[d]					
Number Selling Product	108					
Kelp Allocation (blades)	500/300/750[d]					
Kelp Blade Harvest	60,301					
Fishery Open - Closed	4/6-4/25					
Fishing Occurred	4/19-4/24					
Harvest Occurred	4/24-4/27					

[a] Closed pound/Open Pound.
[b] Double closed pounds/single closed pounds/open pounds.
[c] Single-permit closed pound/double-permit closed pound.
[d] Double closed pounds/single closed pounds/triple closed pounds
Note: No fishery occurred in 1996 since the biomass forecast was below the 1,000-ton threshold.

Table 4. Tenakee Inlet herring spawn deposition timing, location, biomass estimates and food & bait harvests.

Winter & Spring of the Year	Major Spawning Dates	Nautical Miles of Spawn (nm)	Spawning Biomass Estimate[a] (tons)	Food/Bait Quota (tons)	Food/Bait Harvest (tons)	Tenakee Inlet Herring Historical Spawning Locations
1979	5/9-5/11	3.3	2,500	200	0	Corner Bay to Crab Bay, Kadashan Flats
1980	4/28-5/2	3.9	4,485	400	504	Crab Bay to Saltery Bay
1981	4/27-5/5	9.3	7,500	750	847	Saltery Bay to Trap Bay, Kadashan Flats
1982	4/25-5/7	11.1	6,650	650	654	Saltery Bay to Corner Bay, Kadashan Flats
1983	4/25-5/6	13.1	8,870	875	799	Saltery Bay to Corner Bay, Kadashan Flats
1984	4/20-4/26	8.3	12,100	850	619	Crab Bay to Trap Bay, Kadashan Flats
1985	4/24-5/1	9.9	11,000	1,400	1,406	Saltery Bay to W. of Trap Bay
1986	4/27-5/1	8.3	12,500	1,700	2,040	Saltery Bay to W. of Trap Bay
1987	4/22-4/30	7.9	6,600	800	1,275	Crab to Corner Bay & Tenakee Sp. to Cannery Pt.
1988	4/22-4/27	9.1	6,000	1,450	1,577	Saltery Bay to Trap Bay
1989	4/26-4/29	10.3	5,360	720	655	Chatham St. from Wachusetts Cove to Basket Bay
1990	4/25-5/6	2.9	2000	650	595	East Point to Wachusetts Cove, Kadashan Bay to Crab Bay
1991	4/25-5/4	2.1	400	No fishery.		Kadashan Flats to Trap Pt., East Pt.
1992	5/5	trace	200	No fishery.		Long Bay Flats
1993	4/21-4/23	6.4	904	No fishery.		Seal Bay to Trap Bay
1994	4/24-4/26	0.25	400	No fishery.		Crab Bay to Saltery Bay
1995	4/26	0.05	200	No fishery.		South Passage Pt. to Don's Creek
1996	5/4-5/14	18.1	4,569	No fishery.		Trap Bay to Kadashan Bay & S. Passage Pt. to Little Basket Bay & Tenakee Sp. to Cannery Pt.
1997	4/26-5/7	14.4	10,000	300	97.5	Crab Bay to Corner Bay Pt. & S. Passage Pt. to Basket Bay
1998	4/24-4/29	12.4	10,419	825	692	Trap Bay to Basket Bay, Kadashan Flats
1999	4/25-4/28	11.0	11,049	1,023	835	South Passage Pt. to Trap Bay
2000	4/26-5/3	13.8	9,149	542	494	Basket Bay to South Passage Pt. & W. of Trap Bay
2001	4/21-5/1	12.2	7,575	906	775	Corner Bay to W. of Saltery Bay
2002	4/23-4/27	15.4	4,366	840	393	Trap Bay to Basket Bay
2003	4/25-4/28	12.2	3,262	528	328	Saltery Bay to W. of Corner Bay & S.Passage Pt. to Basket Bay
2004				399*		

[a] Spawning biomass estimates were calculated from hydro-acoustical surveys from 1979 through 1986. Spawning biomass estimates were calculated from egg deposition surveys from 1987 through present.

* Quota based on ASA model forcast.

Table 5. Percent-at-age composition of spawning Tenakee Inlet herring, 1982–2003.

Year	Spawning Age Composition (%)						
	Age 3	Age 4	Age 5	Age 6	Age 7	Age 8	Sample Type
1982	24	7	48	21	0	0	Trawl/Nov.81’
1983	49	7	3	12	27	2	Trawl/Nov. 82’
1984	17	38	6	13	22	4	Trawl/Nov. 83’
1985	2	31	45	7	9	6	Trawl/Nov. 84’
1986	3	8.0	42	34	4	10	Seine/Jan. 86’
1987	30	14	16	28	10	3	Hand Seine/April 87’
1988	1	41	18	12	16	12	Cast Net/April 88’
1989	9	12	53	15	8	2	Cast Net/April 89’
1990	10	10	20	38	13	10	Cast Net/ April 90’
1991	No Sampling was performed during 1991 & 1992.						
1992							
1993	20	11	61	2	2	4	Cast Net/April 93’
1994	No Sampling was performed during 1994–1996.						
1995							
1996							
1997	5	88	5	1	1	0	Cast Net/May 97’
1998	3	9	81	7	1	0	Cast Net/April 98’
1999	3	4	11	78	2	1	Cast Net/April 99’
2000	16	8	8	23	42	3	Cast Net/April 00’
2001	15	19	5	7	20	33	Cast Net/April 01’
2002	14	28	18	7	7	27	Cast Net/April 02’
2003	13	10	24	18	5	31	Cast Net/April 03’
2004*	14	18	20	27	15	6	na

*Forecasted

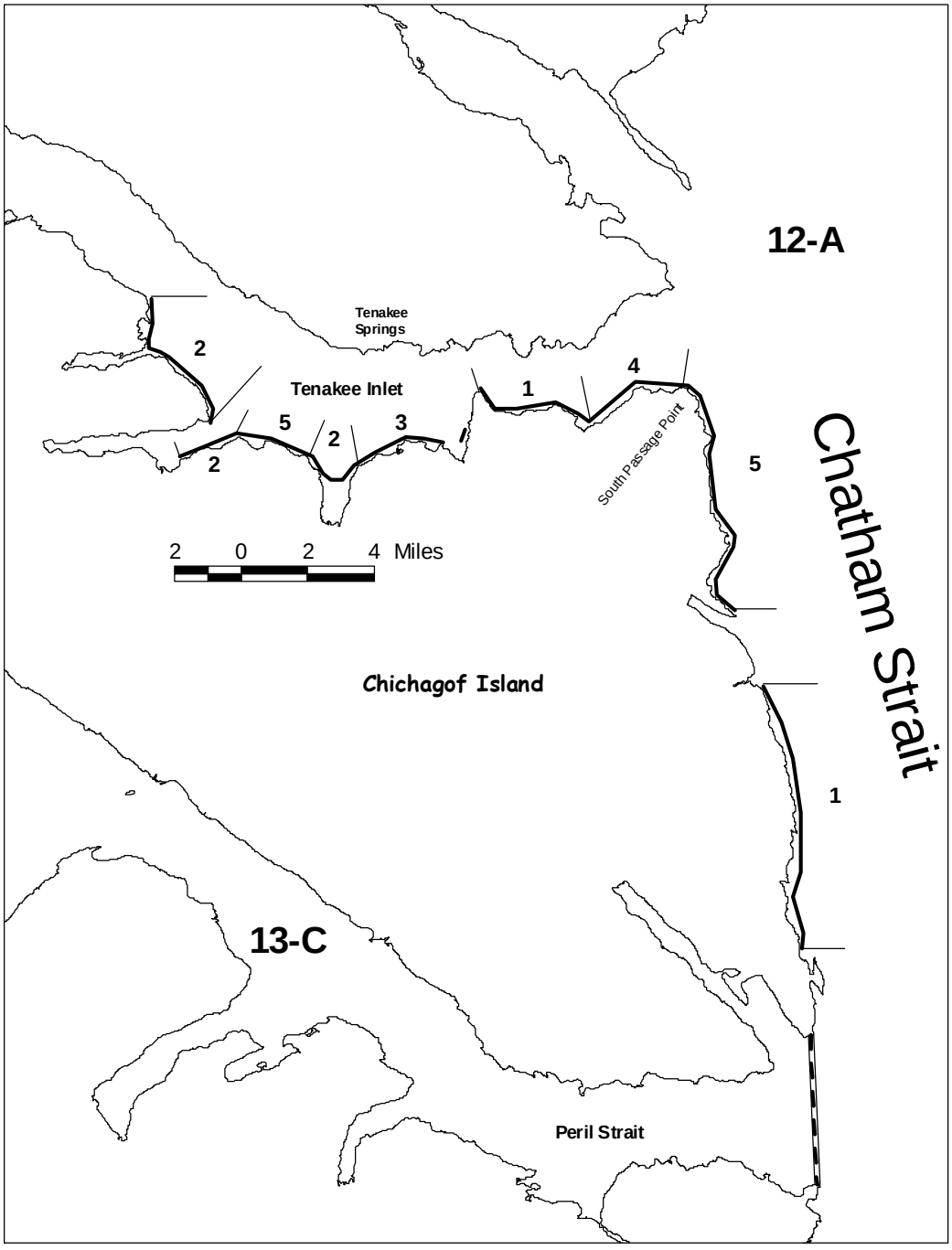

Figure 1. Herring spawn distribution in Tenakee Inlet 1998–2003. Numbers within delineated sections of shoreline indicate number of seasons herring spawn was recorded along that section of shoreline from 1998–2003.

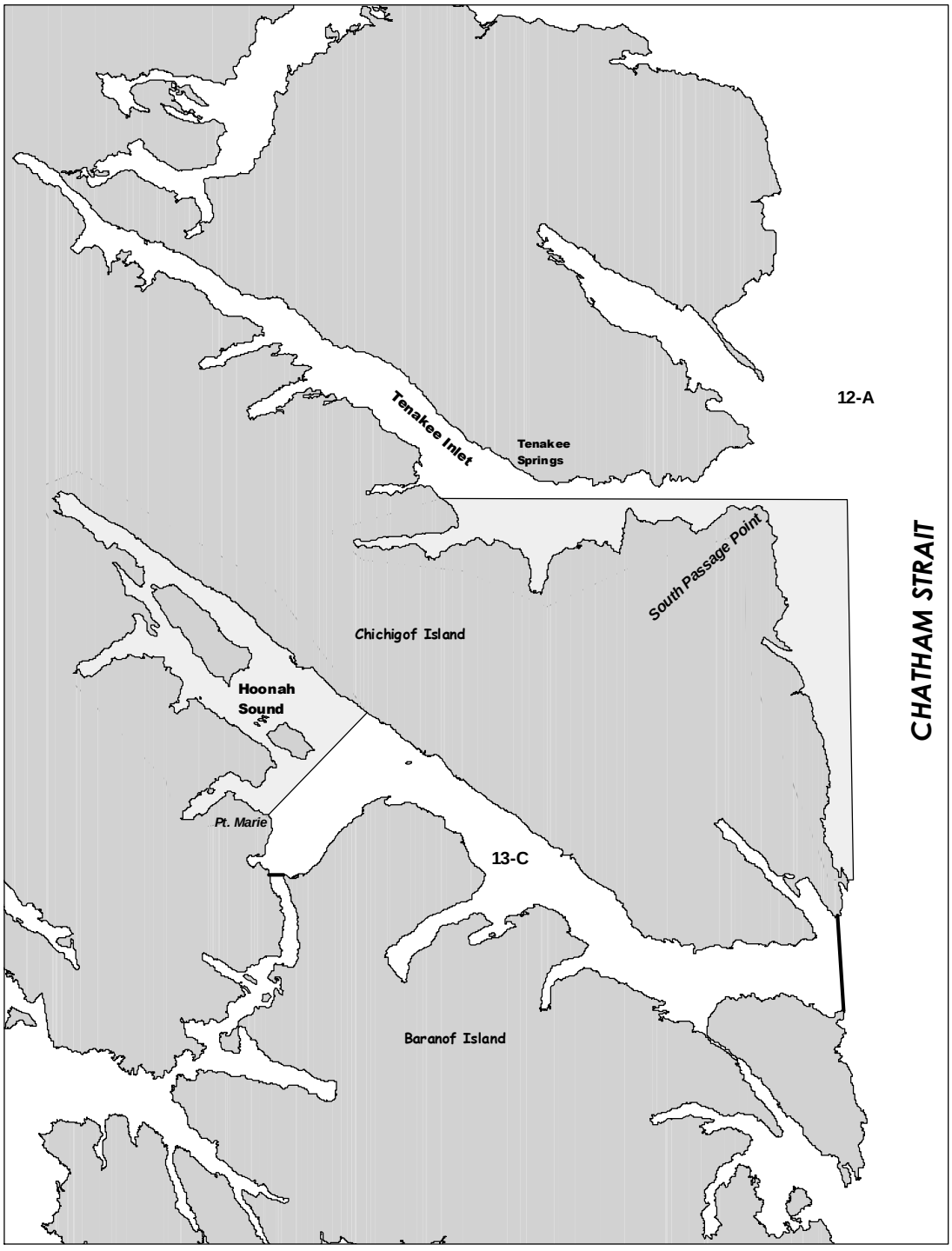

Figure 2. Areas open (dark shade) to spawn-on-kelp fishery in Hoonah Sound and Tenakee Inlet.

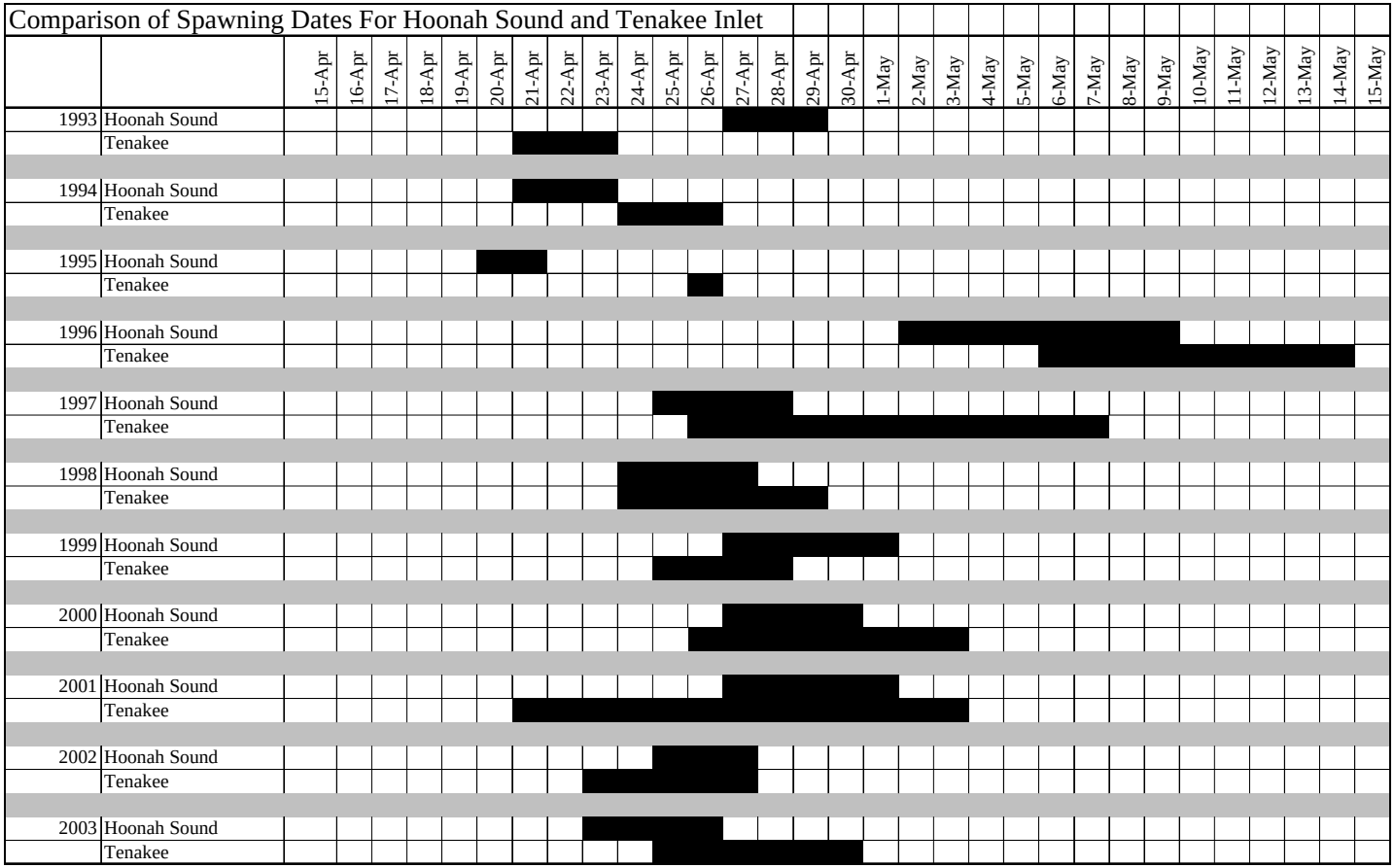

Figure 3. A Comparison of Hoonah Sound and Tenakee Inlet herring spawning dates for years 1993–2003. Black bar indicates dates of active spawning.

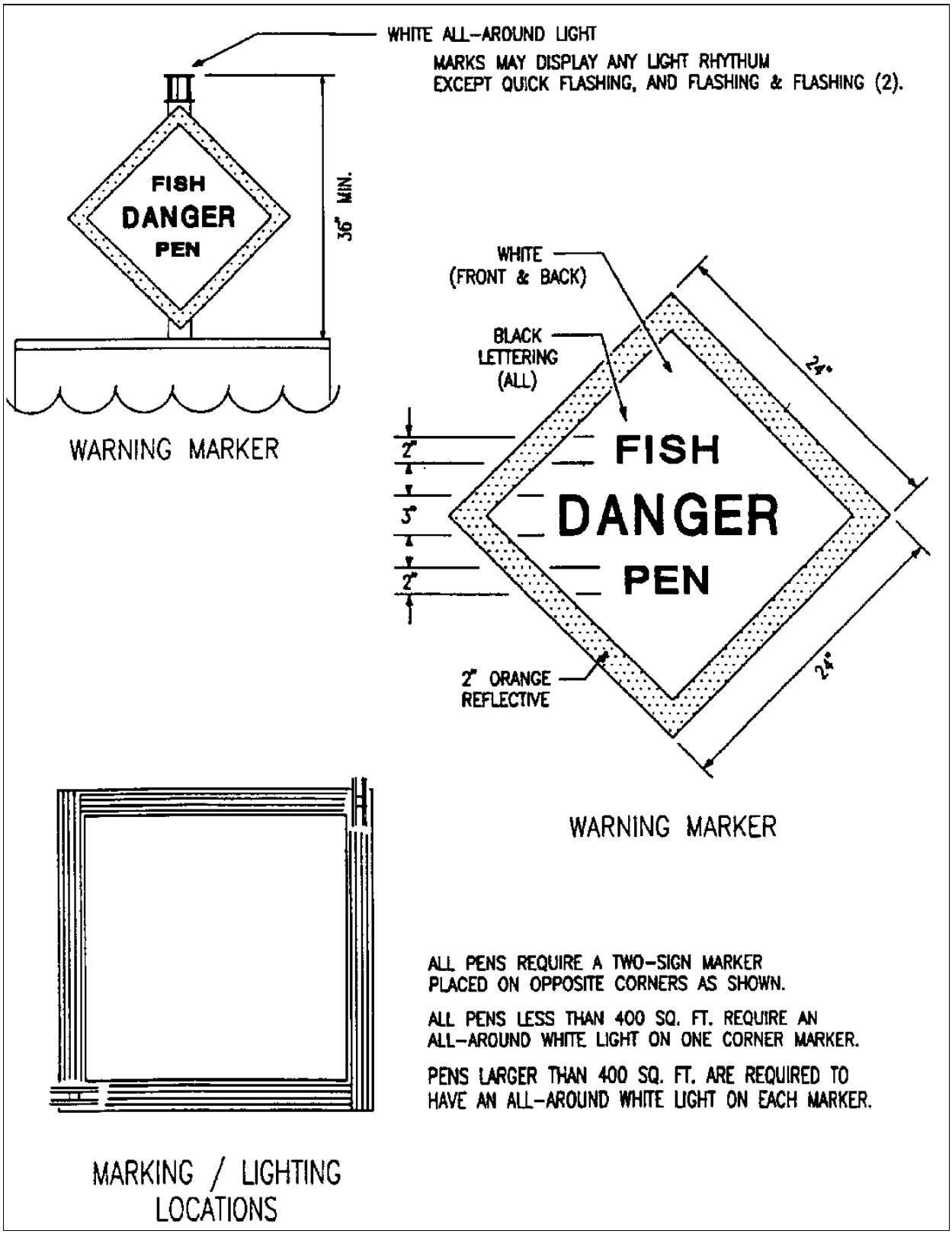

Figure 4. Coast Guard requirements for marking pounds.

LIST OF MANAGEMENT CONTACTS

Following are ADF&G Division of Commercial Fisheries contacts regarding this management plan:

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For information on alternative formats for this and other department publications, please contact the department ADA Coordinator at (voice) 907-465-4120, (TDD) 907-465-3646, or (FAX) 907-465-2440.